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LUMINARY Memo #196

To: Distribution
From: D. Densmore
Date: 13 January 1971
Subject: Luminary Revisions 201 & 202

Revision 201 incorporated PCR 1111/1134, ACB L-47, Anomaly L-1D-16, and made changes to the implementation of PCR 1044, and PCR 334 rev. 1.

Revision 202 corrected a keypunch error in Rev 201 (a "2" intended for column 8 appeared in column 9 causing the rest of the subroutine to be assembled in erasable).

- 1) PCR 1111, modified by PCR 1134 (Issue steering commands to the DAP even when the AGS is indicated in case the indication is false).
 - a) FINDCDUW was changed to not set or reset erasable FLPAUTNO. ("FLPAUTNO" translation: "FLAG PGNCS AUTO NOT" - now you understand!)

It formerly did this depending on whether the LGC was in either AGS or att hold (in which case positive nonzero garbage was left in FLPAUTNO - from initialization at the beginning of FINDCDUW - to indicate "don't steer") or in PGNCS AUTO (zero put into FLPAUTNO to indicate "steer"). Then, formerly, a test was made on FLPAUTNO to see whether to branch to NOATTCNT +2 after DELGMBLP (it made the branch if it wasn't PGNCS AUTO, otherwise checked for engine on).

The logic now checks channel 31 bit 14 (auto bit) directly and branches if it is on (not auto).

- b) FLPAUTNO was deleted from the FINDCDUW erasables and a reference to it was changed to reference the previous erasable. This moved 22 other FINDCDUW erasables up one. All references to the erasable were deleted.

- c) DAPIDLER program was changed. On observing an AGS indication (bit 10 of chan 30 = 1), instead of branching to MOREIDLE, it goes and sets NPGNCSFL ("not-PGNCS flag") and returns to control anyway. If the AGS indication is not present, a test is made on NPGNCSFL to see if the indication last time was AGS. If it wasn't, return is made to control. If it was AGS last time (but PGNCS this) NPGNCSFL is cleared and the DAP is initialized.
- d) Flag NPGNCSFL was defined as flagword 10 bit 1 and entered in the alphabetic flag table.

2) ACB L-47 (Re-code P-axis minimum impulse logic).

This change was to save 12 words in Bank 16, needed for the implementation of PCR 1111/1134. The logic and interfaces remained the same; the coding was just made more efficient.

3) Anomaly L-1D-16 (Constant did not agree with GSOP).

Section 5 of the GSOP specified a value of 5509.5 FPS for ascent guidance d.p. constant VINJNOM. The value in the program (P12) was 5509.3 FPS. VINJNOM was corrected to agree with the GSOP. The difference did not result in a significant error.

4) PCR 1044 (Redesign R53-R57).

A correction was made to a misspelled operand (VALIDCHK) to fix a cuss.

5) PCR 334 rev 1 (New descent and ascent nouns).

Monitor display V16N63 in ascent guidance was changed to V16N94 in accordance with this PCR. The constant V16N94 replaced the constant V16N63 (There is only the one caller).

GSOP Impact:

The following items should be examined for possible impact on the various GSOP sections:

Section 2 item 1

Section 3 item 1

Section 4 item 5

Section 5 item 1